## Remarks

Claims 1, 7-11, and 49-53 were pending in this application. Claims 49 and 50 have been cancelled. Accordingly, claims 1, 7-11, and 51-53 remain pending in this application.

## Rejections Under 35 U.S.C. § 112

Claims 49 and 50 are rejected under 35 U.S.C. § 112, first paragraph. Applicants respectfully traverse this rejection. Without acquiescing to the rejection, claims 49 and 50 have been cancelled. Accordingly, this rejection is now moot.

## Rejections Under 35 U.S.C. § 102

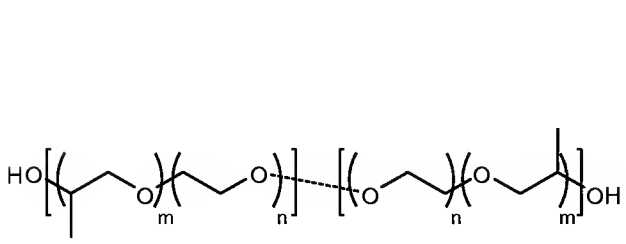
Claims 1-3 and 8 are rejected under 35 U.S.C. § 102(b) as being anticipated by, or in the alternative, as unpatentable under 35 U.S.C. § 103 as being obvious over U.S. Patent No. 4,241,537 ("Wood"). Applicants respectfully traverse this rejection.

The Examiner's rationale fails to take into account any of the product-by-process limitations added by amendment in the previous response filed on December 10, 2008. Specifically, sole independent claim 1 requires that the block copolymer polyol is trifunctional and is formed from a reaction between a polyethylene/polypropylene oxide diol of between 800 and 5,000 MW, trimethylolpropane, and the low molecular weight polyisocyanate.

The product-by-process reaction would necessarily result in a product having urethane linkages near the core. Initially, the first reaction with the three starting reactants (i.e. the claimed diol, the trimethylol propane, and low molecular weight polyisocyanate), involves a reaction between the polyethylene/polypropylene oxide diol and one of the isocyanate groups of the low molecular weight polyisocyanate to form a block copolymer polyol terminated/endcapped with low molecular weight polyisocyanate. In the second reaction, the endcapped diol is reacted with trimethylolpropane, which features three hydroxyl groups, each of which can react with the isocyanate group of the endcapped polyol. The resulting product has a carbon center with three branches (trifunctionality), each branch linked to the diol via urethane

linkages.

A schematic of the two reactions is shown below:



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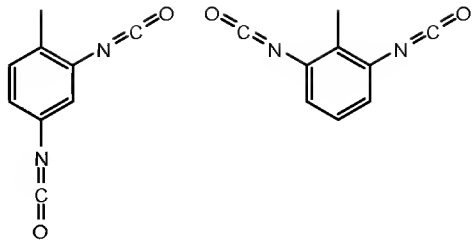
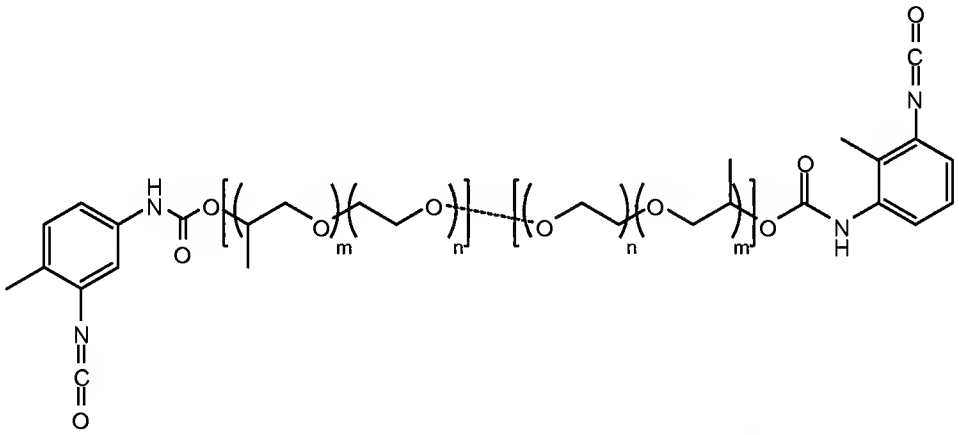


**polyethylene/polypropylene oxide diol** (dotted line indicates middle chain of block copolymer)

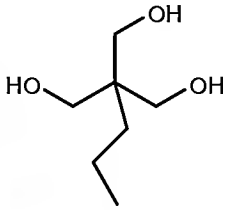
**low molecular weight polyisocyanate** (e.g., toluene diisocyanate)

***FIRST REACTION***

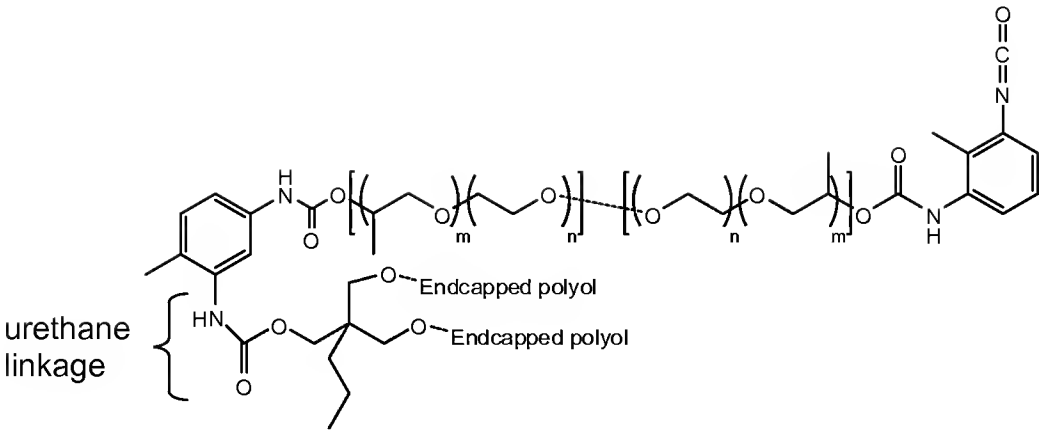


**block copolymer polyol terminated/endcapped with low molecular weight polyisocyanate**

***SECOND REACTION***

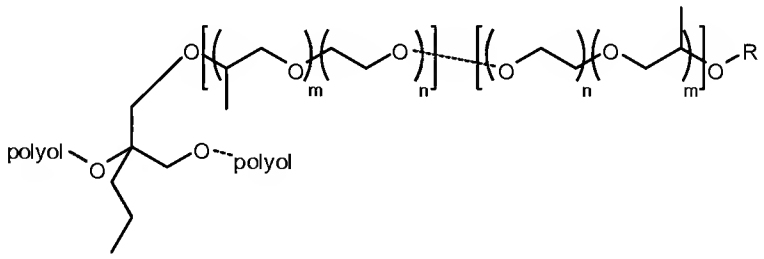


add **trimethylolpropane**




**the claimed block copolymer polyol**

The Examiner states that Wood "contemplates copolymerizing EO and PO in the presence of polyols such as trimethylolpropane," citing col. 7, lines 55-58. (Office Action at p. 4.) This is an oversimplification and mischaracterization of Wood and the claimed invention. This passage of Wood relates to "prepolymer forming polyols" that can be made by reacting EO, either polymerized or copolymerized with PO or BO with polymers such as glycerol. The resulting product have the following structure:




**the product of Wood**

The result of Wood's teaching is a copolyol with ether linkages at the trimethylolpropane core. There is no such contemplation in Wood for a reaction between a polyethylene/polypropylene oxide diol of between 800 and 5,000 MW, trimethylolpropane, and the low molecular weight polyisocyanate, as claimed. Instead,

Wood clearly teaches forming a copolyol, which would involve a reaction between two reactants only, i.e., the diol and the trimethylolpropane. Wood does not contemplate the three reactant reaction as claimed.

In summary, Wood teaches, at best, the use of a trifunctional core that is linked to the polyol via ether linkages. These ether linkages are distinct from a trifunctional core having urethane linkages, which would result from the product-by-process limitation of Applicants' claims. Because Wood does not teach the claimed process limitations, the teachings of Wood cannot possibly result in the product of Applicant's claimed process.

> The structure implied by the process steps should be considered when assessing the patentability of product-by-process claims over the prior art, especially where the product can only be defined by the process steps by which the product is made, or where the manufacturing process steps would be expected to impart distinctive structural characteristics to the final product.

*See* M.P.E.P. § 2113, citing *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Applicants respectfully submit that Wood fails to describe or teach each of the product-by-process limitations of claim 1. Accordingly, Applicants respectfully request withdrawal of this rejection.

## Reconsideration

It is believed that all claims of the present application are now in condition for allowance.

Reconsideration of this application is respectfully requested. If the Examiner believes that a teleconference would expedite prosecution of the present application the Examiner is invited to call the Applicant's undersigned attorney at (617) 933-4433 at the Examiner's earliest convenience.

Any amendments or cancellation or submissions with respect to the claims herein is made without prejudice and is not an admission that said canceled or amended or otherwise affected subject matter is not patentable. Applicant reserves the right to pursue canceled or amended subject matter in one or more continuation,

divisional or continuation-in-part applications.

To the extent that Applicant has not addressed one or more assertions of the Examiner because the foregoing response is sufficient, this is not an admission by Applicant as to the accuracy of such assertions.

Please grant any extensions of time required to enter this response and charge any fees in addition to fees submitted herewith that may be required to enter/allow this response and any accompanying papers to our deposit account 02-3038 and credit any overpayments thereto.

Respectfully submitted,

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